



Calhoun: The NPS Institutional Archive
DSpace Repository

Institutional Publications

The Quarterdeck (Newsletter), 1984-1994

1989-01-13

The Quarterdeck / 1989-01-13

Naval Postgraduate School, Monterey California

<http://hdl.handle.net/10945/61822>

This publication is a work of the U.S. Government as defined in Title 17, United States Code, Section 101. Copyright protection is not available for this work in the United States.

Downloaded from NPS Archive: Calhoun



Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

Dudley Knox Library / Naval Postgraduate School
411 Dyer Road / 1 University Circle
Monterey, California USA 93943

<http://www.nps.edu/library>

the Quarterdeck

Volume 6 Issue 2

A Publication of the Naval Postgraduate School

January 13, 1989

NPS physics professor receives new Menneken Award

by John Sanders

To the unaided human ear, the world beneath the sea seems deceptively quiet. But adjust the receiving bandwidth and sensitivity a bit and you'll encounter the dilemma faced daily by antisubmarine warfare specialists — "noise pollution" that would make the acoustic energy generated on the streets of Manhattan sound monotonous. Sounds that rarely travel more than a mile in the atmosphere can propagate thousands of miles through an ocean.

Creating a new fiber optic sensor that can home in on the sounds of submarines more effectively than existing Navy hydrophones — while screening out noise generated by fish and marine mammals, breaking waves, etc. — has earned NPS physics Prof. Steve Garrett the first Carl E. and Jessie W. Menneken Faculty Award for Excellence in Scientific Research.

The new award program, administered by the Naval Postgraduate School Foundation, is designed "to recognize meritorious research by a junior Naval Postgraduate School faculty member which has identifiable impact on Navy or other DOD technology." It was established in memory of Prof. Carl E. Menneken, dean of research administration from 1962-72, by a grant to the foundation from Mrs. Jessie W. Menneken. As the first recipient, Garrett received \$2,000 during graduation ceremonies held last month.

Important to the Navy

The award citation in Garrett's office notes that his work in fiber optic sensing "represents a significant scientific achievement of manifest importance to the U.S. Navy." But that's clearly a conservative statement.

Garrett sums up the work himself: "We built the best fiber optic sensor ever built." And, he's gone to great lengths to ensure

the validity of his claim.

Fiber optics has revolutionized the telecommunications industry in the last decade, Garrett said, and fiber optic communication systems, in many applications, are ten times cheaper than conventional microwave or coaxial cable communications.

There are useful military applications of that technology, but it assumes coopera-

"We built the best fiber optic sensor ever built"

tives senders and receivers — like in a telephone conversation when you want to talk to your grandmother and she wants to talk to you, he said.

But, Garrett observed, "In applications such as surveillance, you don't have a cooperative sender so you have to detect something in the environment. Maybe that's the sound of a submarine cruising by or the vibrations of an underground nuclear test. There you have an uncooperative source of information in the environment. So to utilize the high bandwidth, low power immunity from electromagnetic interference, etc. — all these good things you get with fiber optic communications — you need a sensor that is entirely optical."

Conventional sensors require electrical power or electronics that can interfere with and reduce the effectiveness of the system. "If you can think of a way of building a hydrophone or seismometer or any other kind of sensor that doesn't involve any electronics at all — that's entirely optical — then you can realize the benefits of the fiber optics communications systems," he said.

"What our lab has been doing over the last four years is building fiber optic sensors powered entirely by light, brought in an optical fiber, monitored by the light, and sent back again along the optical fibers,"

Garrett said. "There's no electrical current at all."

Said Garrett: "The real key (is that) you want to be clever in designing a sensor that is very sensitive to the thing you want and extraordinarily insensitive — absolutely deaf — to everything else." According to Garrett, optical fibers are fair detectors but they are not selective enough.

By themselves, optical fibers are "not particularly sensitive," notes Garrett. But with colleagues Tom Hofler, Michael Brininstool, engineer David Brown, technician Kerry Yarber, and nine (eight USN officers, one NOAA Corps officer) students, "we thought up lots of clever ways for making fibers change their length for different stimuli. (These) schemes enhance the fiber sensitivity to what you want to monitor and cancel the sensitivity to everything else," Garrett said.

100 times more sensitive

The rudiments of one fiber optic hydrophone developed by Garrett's team involve flexible plates which respond to acoustic energy by bending. The plates, bonded to coils to form the transducer, are linked to a fiber optic interferometer. In essence, the transducer converts the sound into a change in the length of the fibers and the interferometer measures the resulting phase changes of light.

The results: a sensor that is 30 decibels better in acceleration cancellation and 25 decibels more sensitive — an instrument that is 1,000 times less sensitive to vibration energy and more than 100 times better at detecting acoustic energy.

With such impressive stats, it's easy to understand Garrett's comments that "we built the best fiber optic sensor ever built." And, thanks to the blend of operational expertise from naval officers and the academic skills offered by a NPS faculty member, there's clearly a new hydrophone in the future for the Navy's antisubmarine warfare community.

From the Superintendent

by Rear Adm. Robert C. Austin

As we face the first holiday of the new year, one can, in the course of events, come to regard holidays as just another long weekend. Is this the way we think of holidays? Days of commemoration need to be thought of in terms of their significance. Why were they declared a national holiday? Each person has his own personal reflection of each occasion.

When I go back to my boyhood years, a war consumed the globe and devastation reached every corner of the globe. I realized that I lived in a world in which man's treatment of his fellow man was horrific. I realized in my personal world some of the conditions I observed could give rise to

similar frustration and economic chaos that had occurred far away but had been part of the reason for triggering is global conflict. It's probably not understandable in terms of most readers of this column, because when I was growing up, an entire segment of society was segregated and isolated as if they were of different human substance.

Fortunately, one of the factors that has made this nation great has been the ability to assimilate people from foreign shores, an assimilation based on hope and opportunity, even for those who were deprived of material successes.

When, as a newspaper delivery boy, I looked at the conditions in Norfolk, Vir-

ginia in the 1940s, the same thought of assimilation, hope and opportunity for Americans of different colors was apparent.

As we celebrate January 16, it is a realization from those boyhood reflections that America continues to live with a greatness to speak out about opportunity for all Americans. It is not that we have achieved it on any given day, but we must always cherish it every day. And for me, that is the meaning of Martin Luther King's birthday. If we can keep the flame of opportunity burning brightly, this country will prosper and be a model for the world to respect, and we will enhance global security.

Postgraduate School accounting functions move from Oakland to Washington, D.C.

by JO1 Ray Fredette Jr.

The shift of NPS accounting functions from Oakland to Washington, D.C., is a major step toward achieving more timely and accurate fiscal management for the school.

the Quarterdeck asked Mr. Bob Jay, NPS Deputy Comptroller, what the shift means to NPS personnel.

the Quarterdeck: "How has the transition of accounting records from Oakland to Washington, D.C. affected NPS?"

Mr. Jay: "This has mostly affected the supervisors and accounting technicians who are working with these problems in the trenches every day, and delays in providing financial information to managers.

"Prior to going to Washington, we didn't have a responsive accounting system. For example, we couldn't tell you what your exact balance was. We couldn't get that information from the computer, even though we knew cost center and sub-cost center, department and division."

the Quarterdeck: "Why?"

Mr. Jay: "It was just an old system. We have had to maintain a separate accounting system locally. We believed that with the transition we could drop our memorandum accounting, but unanticipated problems developed and we had to reestablish our local systems. When we get all the bugs out of the new system, we will be able to query by cost center or sub-cost center and give you a current spending summary without the use of memorandum records.

"Additionally, our workload here at NPS will be lessened and allow us to do things

we couldn't do before, such as identify trends and look at our buying picture more closely. In the budget process we want to know how your supplies are being purchased and where, such as GSA, Navy stock numbers, or open purchase; how much money you've spent traveling — whether it's been military or civilian, administrative, mission-essential, or for training, and how much you spent on airplane tickets, per diem, and rental vehicles. This information will be more readily accessible and available in a more timely manner. What this new system will do is provide us with more timely information, and it'll be more responsive. If there's an error, we'll be able to correct it ourselves. Working with the system at Oakland, we couldn't. We didn't have any of the on-line capability that we will have in the future."

the Quarterdeck: "Will it mean a savings both in money and manpower?"

Mr. Jay: "In manpower, basically. There will be no immediate measurable savings of manpower, but in the future it will be measurable."

the Quarterdeck: "How long has this transition been coming?"

Mr. Jay: "It came very quickly last year. Obviously the Postgraduate School was not happy with the accounting system that we had. Because we had to use an accounting system that was cumbersome and labor intensive, our information was not timely for management information. We're not bashing Oakland. They also were a victim of the system which just wasn't effective. With this one we're more current with the

technology we have available. The Navy is still struggling with this.

"The government operates on obligatory authority. When Congress passes the budget, they will allot the Department of Defense an obligatory authority of, say, \$290 billion. The outlays may be only \$270 billion. This means that you might obligate this year but you won't pay until two or three years from now, and that's what's wrong with our accounting systems. When we had the freeze last year in DOD, we weren't sure if we were over-spending or the accounting system was wrong, so you can see how crucial accounting is to the overall management of the Defense Department."

the Quarterdeck: "Was there any money lost by the Navy because of the inefficiencies of the old accounting system?"

Mr. Jay: "Yes. When the end of the fiscal year comes, it might appear on the books that you spent more money than you actually did, so you may have funds tied up that you could have spent. The system is generally so unwieldy, people don't have the time or information to cancel obligations that should be determined invalid. After the end of the fiscal year, you find out you had more money than you thought. DOD is faced with this problem to the tune of \$40 billion a year. In other words, part of the problem is that our accounting systems overstate our spending, tying up our money unnecessarily. Remember, most of our accounting systems were probably developed more than 15 years ago, when the

(continued on page 3)

Civiscoop

Free AIDS brochures now available

by the Civilian Personnel Office

Free brochures are available in the front office of the Civilian Personnel Office. The titles are: "AIDS and Children," "Facts about AIDS," "What You Should Know about AIDS," and "AIDS and Your Job - Are There Risks?"

Vacancy announcements: Applications for the following positions are now being accepted in the Civilian Personnel

Accounting functions move to D.C.

(continued from page 2)

defense budget was around \$100 billion. Now antiquated systems are trying to track \$300 billion. When the Reagan administration came into being, DOD had about 500 line items in its budget. A line item denotes a certain program, such as professional development (the Naval Postgraduate School), research, or base operations. That budget has now proliferated to 2,200 line

"The biggest thing that concerned the superintendent, Capt. Clay and me was the personal impact on the employees when their pay got messed up."

items, and whenever you establish a new line item, you have to devise an accounting system to track it separately. In other words, when Congress appropriates money to buy zebras, you want to ensure you buy zebras, not elephants. So this situation, compounded by more money changing hands, and considering the "state of the art" of Department of Defense accounting systems, the accounting system turned financial management into a nightmare. But in our own little piece of the world here, we are optimistic that the transition is going to help us."

the Quarterdeck: "Was there a problem with civilian pay with this move?"

Mr. Jay: "The problem was in the transition from Oakland to Washington. Naval Supply Center Oakland sent a tape to

Office under the Merit Staffing Program. For further information consult the vacancy announcement in your department or call ext. 2001.

Vacancies: Mail and file clerk, GS-5, FNOC; academic services manager, GS-7/9 or supervisory education technician, GS-7/9, office of academic services.

Temporary appointment not to exceed one year: electrician (high voltage) WG-11, public works dept.

Washington that supposedly contained updated information on all our civilian employees. There were problems with the contents when it was transferred...not all of the information was transmitted. One particular problem was that they got the leave messed up. They missed a whole pay period with not crediting civilians for leave, so everybody was behind a pay period on leave. We had leave, social security and income tax problems. It wasn't anybody's fault, but the nature of the beast. It hurt, but Washington was very responsive, and if someone did get hit with a mistake, they sent special checks to us and really bent over backwards trying to help us.

"The biggest thing that concerned the superintendent, Capt. Clay (NPS comptroller) and me was the personal impact on the employees when their pay got messed up. The superintendent personally interceded on the employees' behalf by sending a message to the Naval Regional Finance Center in Washington asking that highest priority be given to resolution of civilian pay problems. If a calculator doesn't get paid for, that doesn't impact you personally, but if your pay's short, and the rent's due, that hurts.

"We do want to publicly thank the employees here at the school who have been very patient with us. They didn't come down here and raise heck with us, but were very patient, probably more patient than they should have been, and we did appreciate that."

The Quarterdeck is published weekly in accordance with NPPR-35. Views and opinions expressed are not necessarily those of the Department of the Navy. Deadline for all submissions, including classified ads and items for the campus calendar, is noon each Friday.



Campus Calendar

-Friday January 13-
1200, LA NOVIA ROOM
NPS TOASTMASTERS
(POC: LTJG PAT HENDRICKS, X4569)

1530, QUARTERDECK LOUNGE
MILITARY AWARDS CEREMONY

-Sunday January 15-
1300, DLI OFFICERS CLUB
RESERVE OFFICERS ASSOCIATION
MEETING (CHAPTER 32)
(POC: NANCY NOLETTE, 883-2636)

-Tuesday January 17-
1515, SPANAGEL HALL RM 117
STUDENT COUNCIL MEETING
(POC: LCDR BILL KEAR, X2536)

-Wednesday January 18-
1410, INGERSOLL HALL RM 119
INTRODUCTION TO SAS

1510, INGERSOLL HALL RM 119
XEDIT TIMESAVERS

1610, INGERSOLL HALL RM 224
INTRO TO WORDPERFECT (I)

-Thursday January 19-
1510, INGERSOLL HALL RM 119
MVS BATCH SYSTEM OVERVIEW

1610, INGERSOLL HALL RM 224
INTRO TO WORDPERFECT (I)

1930, BARBARA MCNITT BALLROOM
CRAMALOT NEWCOMERS EVENING

-Friday January 20-
1210, INGERSOLL HALL RM 224
INTRO TO WORDPERFECT (I)

-Monday January 23-
1410, INGERSOLL HALL RM 119
INTRODUCTION TO MINITAB

1510, INGERSOLL HALL RM 224
INTRODUCTION TO MS-DOS

-Wednesday January 25-
1510, INGERSOLL HALL RM 224
INTRODUCTION TO MS-DOS

1510, INGERSOLL HALL RM 119
INTERMEDIATE TOPICS IN VMCMS

-Thursday January 26-
1510, INGERSOLL HALL RM 119
INTRODUCTION TO GTHESIS

Student council meeting

The Officer Student Advisory Council will hold its first meeting of 1989 in Spanagel Hall Room 117 at 3:15 p.m. Tuesday, Jan. 17. Details on the meeting are available from Lt. Cmdr. William Kear, ext. 2536.

Sports beat

by JOSH Davis Bowden

A group of NPS students are organizing an NPS bicycle racing team to participate in regional competition during the 1989 racing season.

Bicyclists are wanted for training rides, team workouts and instruction in group riding tactics. The riders will meet daily outside the NPS gym at 3:15 p.m. for practice rides, and weekend training rides will be with the Monterey Triathlon Club and Velo-Club Monterey.

In addition to training rides, activities will include group travel to races around the district and team racing tactics. NPS faculty, students or employees are welcome to join for workouts only or participation in races. For more information contact Lt. Eli Hertz at ext. 2491 or come by the gym for an afternoon ride.

PT Test

The following are the best 1 1/2 mile run times by curriculum in the last physical readiness test for male and female.

| code | male |
|----------|-----------------------|
| 30 | Ed Bellini 8:05 |
| 31 | Gary Black 8:23 |
| 32 | Robert Thomlow 8:15 |
| 33 | Joe Giaquinto 7:47 |
| 34 | Mark Guttendorf 8:07 |
| 35 | James Korcal 8:58 |
| 36 | John Rackliffe 8:40 |
| 37 | Thomas Hogan 8:25 |
| 38 | Jerry Anderson 8:42 |
| 39 | Charles Racoonin 7:59 |
| 3A | Pete Reedy 8:36 |
| Enlisted | Reggie Sampson 8:19 |
| Staff | Nick Cimorelli 8:09 |

| code | female |
|----------|-----------------------------|
| 30 | Katie Thurman 13:18 |
| 31 | Mary Dunston 10:45 |
| 32 | Melanie Ivie 11:43 |
| 33 | Renee Pectruszka 12:19 |
| 34 | Johanna Hafley 14:37 |
| 35 | Jacqueline Binhlam 10:00 |
| 36 | Krista Hagmann 10:07 |
| 37 | Lynn Wyrick 11:22 |
| 38 | Teresa Shanahan 12:15 |
| 39 | Suzanne Dee 9:02 |
| 3A | Bernadette Fitzgerald 14:06 |
| Enlisted | Mary Jorewicz 10:22 |
| Staff | Joan Pinaire 11:16 |



The NPS basketball season got underway this week and in the opening night of play the "A" League teams took the floor, with plenty of high-flying action.

Random Deviates bounced Weapons 59-55, Eagles II flew past Aerocats I 50-47, Thunder & Lightning struck down the NNOA Eagles 50-44, and Pubs I crushed Aerocats II 72-52.

Rec News

Athletic membership cards for use of all NPS fitness activities, which include tennis, racquetball and squash courts, nautilus and free weights rooms, basketball court, and sauna are \$2 per month for all active duty, reserve and retired military personnel and their dependents. The card also entitles the holder to free towel and gym gear issue. For NPS civilians and their dependents, the card is \$3.

Active duty military who choose not to buy a card can use the facilities for free, but will be charged for towel rental and/or gym gear checkout. A \$1 a day fee is charged to all retired and reserve military, DOD civilians and dependents.

Open to all members

The Navy "Ball and Chain" bowling league will bowl on Jan. 14 at 5:30 p.m. at Lincoln Lanes in Monterey. The league is open to all members of the armed forces, civilian employees and dependents. If you are interested in forming a team, contact BM1 Fred Polumbo at ext. 2275.

Classifieds

For Sale: Ten gallon aquarium with accessories, \$25, portable G.E. dishwasher, \$30, 21'X12' beige carpet and pad, \$100, 11'X10' brown carpet, \$60, 1982 Chevette 4 door hatch back, \$1295. Call 372-2022.

For Sale: 1985 Nissan 200SX. Sun roof, power drive, turbo, two-door, cruise control, brand new tires and battery, car cover and more! Superb condition. \$8,000. Call Lt. Leslie at 646-2060/2069.

For Sale: Ski rack, fits two sets: \$10,000 with a free 1985 Nissan 300 ZX, black, t-tops, new tires, excellent condition. Call 375-3397.

For Rent: House in Marina, 3 bedrooms/2 full baths, fireplace, washer/dryer, dishwasher, 2 car garage with auto door, deck and gardener. Call 384-9027.

For Sale: Quality upright grand piano from the 1880's, excellent condition, \$975.00. Call 484-2590.

For Sale: Toshiba color video camera (IK-1900), TV Nikkor auto/manual zoom macro 12.5 - 100mm 1:1.6, boom microphone, Toshiba AC camera adapter (AC-1900) included. \$350.00. Call 649-3859 after 6:00 p.m.

At the Movies

All movies will be shown at 7 p.m. except where noted and are subject to change. For more information about the movie schedule call 242-5566.

Barker Theater (at Fort Ord main exchange)
 Friday, Jan. 13 - Everybody's All American (R)
 Saturday, Jan. 14 - Child's Play (1:30 p.m. R)
 Saturday, Jan. 14 - Child's Play (R)
 Sunday, Jan. 15 - Child's Play (R)
Presidio of Monterey Theater
 Friday, Jan. 13 - Coming To America (R)
 Saturday, Jan. 14 - Coming To America (R)
 Sunday, Jan. 15 - Everybody's All American (R)
Hanson Theater (at Fort Ord on Sixth Avenue near Bay View Chapel)
 Friday, Jan. 13 - They Live (R)
 Saturday, Jan. 14 - Who Framed Roger Rabbit (PG)
 Sunday, Jan. 15 - The Accused (R)

